

Claims

I claim:

1. A computer-implemented method for resolving prerequisites for client devices in an Open Service Gateway Initiative (OSGi) framework, comprising:
 - determining, on a server, prerequisites for an OSGi bundle to be loaded on a client device;
 - communicating the prerequisites from the server to the client device;
 - receiving a response from the client device, wherein the response identifies any resource limitations of the client device based on the prerequisites; and
 - resolving the prerequisites by identifying a final set OSGi bundles on the server that fulfills the prerequisites within the resource limitations of the client device.
2. The method of claim 1, wherein the method is performed recursively until the prerequisites are completely resolved.
3. The method of claim 1, further comprising loading the final set of OSGi bundles on the client device if the prerequisites are completely resolved.
4. The method of claim 3, wherein the loading comprises the server instructing the client device to load the final set of OSGi bundles in a particular order.

5. The method of claim 1, wherein the prerequisites comprise at least one item selected from the group consisting of a service, a package and a computer resource needed by client device.

6. The method of claim 1, further comprising caching information derived from the response on the server.

7. The method of claim 1, wherein the method is applied in the presence of a low bandwidth or high cost connection between the server and the client device.

8. The method of claim 1, wherein the final set of OSGi bundles include OSGi bundles that are identified from a repository accessed by the server.

9. The method of claim 1, further comprising:

receiving the prerequisites on the client device;

determining whether the client device has the prerequisites, wherein any of the prerequisites that the client device does not have represent the resource limitations; and

sending the response to the server, wherein the response includes the resource limitations.

10. A computer-implemented method for recursively resolving prerequisites for client devices in an Open Service Gateway Initiative (OSGi) framework, comprising:

determining, on a server, prerequisites for an OSGi bundle to be loaded on a client device;

communicating the prerequisites from the server to the client device;

receiving a response from the client device, wherein the response identifies any resource limitations of the client device based on the prerequisites;

caching information derived from the response on the server; and

resolving the prerequisites by recursively identifying a final set that fulfills the prerequisites within the resource limitations of the client device.

11. The method of claim 10, further comprising loading at the final set of OSGi bundles on the client device when the prerequisites are completely resolved.

12. The method of claim 11, wherein the loading comprises the server instructing the client device to load the final set of OSGi bundles in a particular order.

13. The method of claim 10, wherein the prerequisites comprise at least one item selected from the group consisting of a service, a package and a computer resource needed by client device.

14. The method of claim 10, wherein the method is applied in the presence of a low bandwidth or high cost connection between the server and the client device.

15. The method of claim 10, further comprising:

receiving the prerequisites on the client device;

determining whether the client device has the prerequisites, wherein any of the prerequisites that the client device does not have represent the resource limitations; and

sending the response to the server, wherein the response includes the resource limitations.

16. A computerized system for resolving prerequisites for clients devices in an Open Service Gateway Initiative (OSGi) framework, comprising:

a prerequisite computation system for determining, on a server, prerequisites for an OSGi bundle to be loaded on a client device;

a communication system for communicating the prerequisites from the server to the client device, and for receiving a response from the client device, wherein the response identifies any resource limitations of the client device based on the prerequisites; and

a prerequisite resolution system for resolving the prerequisites by identifying a final set of OSGi bundles on the server that fulfills the prerequisites within the resource limitations of the client device.

17. The system of claim 16, wherein the prerequisite resolution system recursively resolves the prerequisites.

18. The system of claim 16, further comprising a bundle loading system for loading the final set of OSGi bundles on the client device if the prerequisites are completely resolved.

19. The system of claim 18, wherein the bundle loading system comprises an instruction passing system for instructing the client device to load the final set of OSGi bundles in a particular order.

20. The system of claim 16, wherein the prerequisites comprise at least one item selected from the group consisting of a service, a package and a computer resource needed by client device.

21. The system of claim 16, further comprising a response caching system for caching information derived from the response on the server.

22. The system of claim 16, wherein the final set of OSGi bundles includes OSGi bundles that are identified from a repository accessed by the server.

23. The system of claim 16, further comprising:

an analysis system for determining whether the client has the prerequisites, wherein any prerequisites that the client device does not have are identified as the resource limitations; and

a response system for sending the response from the client device to the server.

24. The system of claim 16, wherein the system uses SyncML DM protocol for communication between the client device and the server

25. A program product stored on a recordable medium for resolving prerequisites for clients devices in an Open Service Gateway Initiative (OSGi) framework, comprising:

program code for determining, on a server, prerequisites for an OSGi bundle to be loaded on a client device;

program code for communicating the prerequisites from the server to the client device, and for receiving a response from the client device, wherein the response identifies any resource limitations of the client device based on the prerequisites; and

program code for resolving the prerequisites by identifying a final set of OSGi bundles on the server that fulfills the prerequisites within the resource limitations of the client device.

26. The program product of claim 25, wherein the program code for resolving recursively resolves the prerequisites.

27. The program product of claim 25, further comprising program code for loading the final set of OSGi bundles on the client device if the prerequisites are completely resolved.

28. The program product of claim 27, wherein the program code for loading comprises program code for instructing the client device to load the final set of OSGi bundles in a particular order.

29. The program product of claim 25, wherein the prerequisites comprise at least one item selected from the group consisting of a service, a package and a computer resource needed by client device.

30. The program product of claim 25, further comprising program code for caching the information derived from response on the server.

31. The program product of claim 25, wherein the final set of OSGi bundles includes bundles that are identified from a repository accessed by the server.

32. The program product of claim 25, further comprising:

program code for determining whether the client has the prerequisites, wherein any prerequisites that the client device does not have are identified as the resource limitations; and

program code for sending the response from the client device to the server.